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Persistent Low-Level Serum β-hCG: Diagnostic and Therapeutic Challenges Leading to Video-Assisted Thoracoscopic Surgery (VATS) for an Isolated Pulmonary Lesion

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INTRODUCTION

A woman with a previous vaginal delivery was referred to our tertiary gestational trophoblastic disease center because of persistent low-level serum β-hCG without evidence of pregnancy or active gestational trophoblastic neoplasia.

CASE REPORT

A 27-year-old G2P1 woman presented with persistent low-level serum β-hCG (30–50 mIU/mL) after an initial misdiagnosis of miscarriage. Transvaginal ultrasonography, pelvic MRI, and chest-abdominal CT showed no pregnancy or gestational trophoblastic disease. Evaluation excluded phantom hCG, biotin interference, familial hCG syndrome, renal dysfunction, and pituitary hCG. Two years later, β-hCG increased to 98 mIU/mL, and repeat chest CT identified a 2.3 × 1.9 cm subpleural part-solid nodule in the right lower lobe.

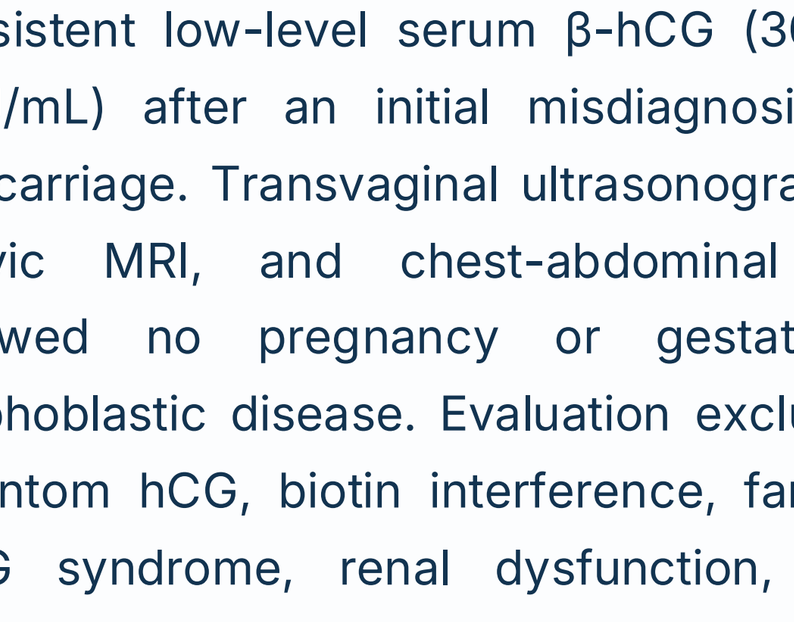


Figure caption: 2.3 × 1.9 cm subpleural nodule in the right lower lobe, with ground-glass, cystic, and central solid components

After multidisciplinary discussion, she underwent video-assisted thoracoscopic wedge resection. Expert pathological review with immunohistochemistry confirmed pulmonary epithelioid trophoblastic tumor (ETT).

Although they could not distinguish between a primary and metastatic ETT, extensive evaluation revealed no evidence of intrauterine disease. During evaluation, the patient conceived spontaneosly. Considering complete surgical resection, disease confined to the lungs, normalization of β-hCG, and the relative chemoresistance of ETT, active surveillance was chosen over adjuvant chemotherapy. Pregnancy progressed uneventfully, with vaginal delivery at 39 weeks. Placental histopathology was negative, β-hCG remained undetectable postpartum, and there has been no recurrence. Follow-up included monthly serum β-hCG and clinical evaluation with chest imaging every six months for two years, then every six months thereafter, planned for 10 years. She remains disease-free.

DISCUSSION

In the absence of uterine or extrapulmonary disease, the lesion was classified as FIGO stage III, assuming a gestational origin with isolated pulmonary metastasis. However, STR genotyping could have distinguished a gestational from a nongestational tumor, with important implications for staging and management, because a primary pulmonary ETT would have been managed as localized disease (stage I) rather than FIGO stage III.

CONCLUSION

Referral to a specialized gestational trophoblastic disease center facilitated accurate diagnosis and avoided unnecessary treatment.